2020 Red Lion Watershed Wetland Health Report Card

About the Watershed

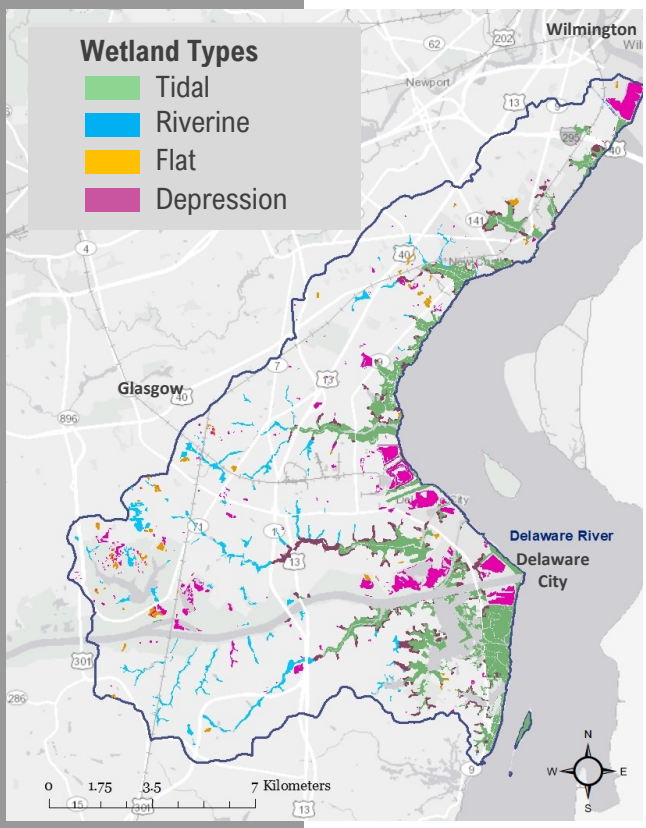
The Red Lion watershed is located within New Castle County, where it encompasses 46,283 acres (72 square miles) of land within the Delaware Bay and Estuary Basin. It is composed of the C&D Canal East, Dragon Creek, Red Lion Creek, Army Creek, and Broad Dike Canal. Approximately 16% of the watershed's land area was covered by wetlands and dominated by tidal wetland types as of 2012.

Prior to 1992 an estimated 1,375 acres of wetlands had been lost in this watershed due to conversion to other land uses such as residential or commercial development. More recently, changes have been seen in wetland community types where wetlands are being converted to open water ponds due to development. This is alarming as wetlands that are void of plants do not provide the same valuable benefits and services that planted wetlands provide.

Overall, the Red Lion watershed's wetlands received a D$^+$ for their health score. Common wetland stressors were the presence of invasive plant species, and disturbances in the buffer surrounding the wetlands including agriculture, roads, and development.

A wet flat wetland assessment site.

How Are Wetlands Graded?



There are many different types of wetlands in Delaware, and to accurately grade their health, they are broken into two categories based on how they receive their water supply: tidal wetlands and non-tidal wetlands.

Tidal wetlands have water moving in and out of them in cycles based on the moon's gravitational pull (the tides), and the Mid-Atlantic Tidal Wetland Rapid Assessment Method (MidTRAM) is used to grade them. Tidal wetlands can also be grouped into estuarine, also known as saltwater, and freshwater wetlands. Non-tidal wetlands are all freshwater in Delaware and include riverine, flat and depression wetlands. They receive their water from rain, snow and underground springs. The Delaware Rapid Assessment Procedure (DERAP) is used to grade them.

In both methods, biologists look for and tally living and non-living stressors (also called environmental indicators) that prevent a wetland from functioning properly. **Throughout the Red Lion watershed, a total of 116 sites were assessed and graded in 2017.**

Environmental Indicators of Wetland Health

The invasive mile-a-minute plant.

Wetland Habitat

Habitat indicators that cause a wetland's grade to decline include: forest harvesting, mowing, farming or grazing of the land, invasive species, and roads through the wetland.

The most common stressors to habitat in this watershed were the presence of invasive plant species such as common reed, Japanese honeysuckle, narrow-leaf cattail, multiflora rose, Japanese stiltgrass, and reed canary grass.

A fill pile or landscape alteration in a wetland.

Wetland Hydrology

Changes to water movement can cause a wetland's grade to decline. Indicators include: ditching, stream alterations, dams, stormwater inputs, and filling or excavation.

The most common stressors to hydrology in this watershed were added fill, ditching and water flow restrictions (dikes, dams, roads, etc.).

In this aerial view, the wetland assessment area is represented by the green circle, and the buffer is represented by the yellow circle.

Buffer

A buffer is a zone of land just outside of the wetland that has the ability to protect a wetland from disturbances occurring in the surrounding upland landscape.

The most common stressors in the buffer area in this watershed were the presence of nearby development, agricultural areas and roads.

Grade by Wetland Type

Habitat Hydrology Buffer

Wetland Health Scale:

Excellent Good Fair Poor Very Poor

Tidal Wetlands—Fresh, Brackish or Salt

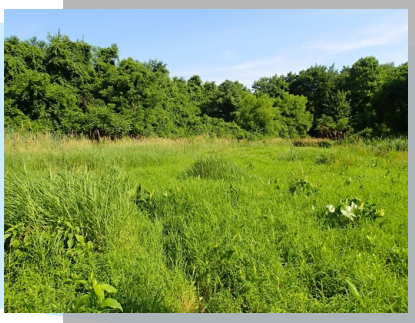
Tidal wetlands are regularly flooded by the tides and are some of the most productive ecosystems on earth, supplying habitat for important fisheries. They provide protection for coastal populations by reducing flooding and storm damage.

Common Problems: *Invasive plants, ditching and development in the surrounding landscape*

Riverine Wetlands

Riverine wetlands occur along streams or rivers and provide storage for floodwaters and groundwater. The water that moves into these wetlands is cleaned before it moves downstream. They form corridors of valuable wildlife habitat.

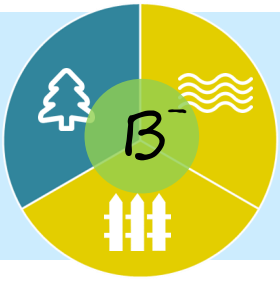
Common Problems: *Invasive plants and roads, development, agriculture and mowing in surrounding landscape*



Flat Wetlands

Flat wetlands are typically located at the upper reaches of the watershed. They are seasonally wet and often appear dry on the surface. They absorb precipitation and filter water slowly into streams and groundwaters.

Common Problems: *Invasive plants, roads, ditching, landscape alterations, and development, roads, agriculture and mowing in surrounding landscape*



Depression Wetlands

Depressions are isolated shallow pools of water that occur in low lying areas. They are seasonally wet and provide critical habitat for amphibians like frogs and salamanders.

Common Problems: *Invasive plants, nutrient indicator species, weir/dam/road, and roads, development and agriculture in surrounding landscape*

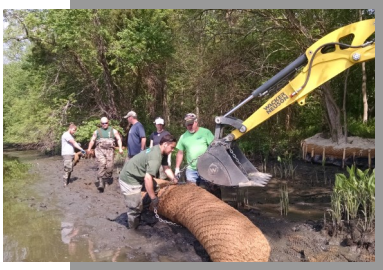
Did You Know?

You can find out more information about Delaware's wetlands by visiting:
dnrec.alpha.delaware.gov/wetlands

The Red Lion Watershed's Wetlands Need Your Help!

What you can do:

Managing invasive species on your property by removing and replacing them with Delaware natives. Allow native plants to grow and thrive alongside wetlands, rivers and streams for cleaner water and erosion protection. For a list of Delaware's invasive plant species please visit: *delawareinvasives.net*



Adding nature-based landscaping designs and green infrastructure on your property to control erosion and water runoff and improve water quality. Consider installing rain gardens or rain barrels in your yard, living shorelines in tidal areas, or planting trees in open areas. For more information on these practices and possible funding sources, please visit: *de.gov/greeninfrastructureprimer*.

Protecting and maintaining buffers around your wetlands. Buffers are natural planted strips along wetlands that can help wetlands stay in good health. It is best to not mow right up to the stream edge and to not clear the understory. For more information about buffers, please visit: *wmap.blogs.delaware.gov/2019/12/10/grass-and-forest-riparian-buffers/*.

Preserving or restoring wetlands on your land. Approximately 75% of the wetlands in this watershed were privately owned. This means we need your help in maintaining and improving our wetlands and the natural benefits they provide. To find out about restoration options, please visit: *wetlandswork.org*.

Supporting better wetland protection by contacting your local decision makers. Activities in non-tidal wetlands are not regulated by the State of Delaware, and every additional wetland filled or destroyed leads to less clean water, fewer wildlife habitats, and less flood protection for us all. *de.gov/wetlandprotectionguidebook*

More Information

Please visit *de.gov/delawarewetlands* to view the entire report and learn more about the assessment methods.

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